

1. A method for identifying an agent that modulates glucose uptake in a mammalian cell, the method comprising:

contacting a mammalian cell with a candidate agent;

determining whether the candidate agent modulates store-mediated  $\text{Ca}^{2+}$  entry

5 (SMCE) into the cell; and

determining whether the candidate agent modulates glucose uptake in the cell.

2. The method of claim 1, wherein the method comprises determining whether the candidate agent increases SMCE into the cell.

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3. The method of claim 2, wherein the method comprises determining whether the candidate agent increases glucose uptake in the mammalian cell.

4. A method for identifying an agent that modulates glucose uptake in a mammalian cell, the method comprising:

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contacting a candidate agent with a SMCE-regulating factor;

determining whether the candidate agent modulates a function of the SMCE-regulating factor; and

determining whether the candidate agent modulates glucose uptake in a

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mammalian cell.

5. The method of claim 4, wherein the method comprises determining whether the candidate agent stimulates the function of the SMCE-regulating factor.

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6. The method of claim 5, wherein the method comprises determining whether the candidate agent increases glucose uptake in the mammalian cell.

7. A method for identifying an agent that modulates glucose uptake in a mammalian cell, the method comprising:

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contacting a mammalian cell with a candidate, wherein the candidate agent modulates SMCE into the cell;

measuring glucose uptake in the cell in the presence of the candidate agent; and  
determining whether the candidate agent modulates glucose uptake in the cell,  
wherein altered glucose uptake in the cell in the presence of the candidate agent  
compared to the absence of the candidate agent indicates that the candidate agent  
5 modulates glucose uptake.

8. The method of claim 7, wherein the candidate agent increases SMCE into the  
cell and thereby increases glucose uptake in the cell.

10 9. A method for modulating glucose uptake in a mammalian cell, the method  
comprising contacting a mammalian cell with an amount of an agent effective to  
modulate SMCE and thereby modulate glucose uptake in the cell.

10. The method of claim 9, wherein the agent increases SMCE and thereby  
15 increases glucose uptake in the cell.

11. The method of claim 9, wherein the cell is a skeletal muscle cell.

12. The method of claim 9, wherein the method further comprises contacting the  
20 cell with insulin.

13. A method for the treatment of type 2 diabetes, the method comprising  
administering to an individual in need thereof an amount of an agent effective to facilitate  
SMCE and thereby modulate cellular glucose uptake.

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14. The method of claim 13, further comprising administering insulin  
subsequently or simultaneously to the administration of the agent.

15. The method of claim 13, further comprising diagnosing the individual as  
30 having type 2 diabetes.

16. A method for the treatment of type 2 diabetes, the method comprising:  
administering to an individual in need of such treatment an amount of an agent  
effective to sensitize SMCE and thereby modulate cellular glucose uptake; and  
administering to the individual insulin, subsequently or simultaneously to the  
5 administration of the agent.

17. The method of claim 16, further comprising diagnosing the individual as  
having type 2 diabetes.